

Listing of the Claims:

This listing of claims will replace all prior versions and listing of claims in the application:

1-400. (Cancelled)

401.(Currently Amended) A method of expanding a population of CD34+ hematopoietic stem cells *ex-vivo*, while at the same time, substantially inhibiting differentiation of the stem cells *ex-vivo*, the method comprising:

(a) culturing said CD34+ stem cells ex-vivo under conditions allowing for cell proliferation, said conditions which comprising providing nutrients and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FLt3 ligand, IL-6 and IL-3 and,

(b) at the same time, culturing said cells in the presence of about 1.0 mM to about 10at least 0.1 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative for a culture period resulting in;

thereby expanding the population of hematopoietic stem cells while at the same time, substantially inhibiting differentiation of said CD 34+ stem cells ex-vivo.

402-410. Cancelled

411. (Currently Amended) A transplantable hematopoietic cell preparation comprising: an expanded population of CD34+ hematopoietic stem cells propagated *ex-vivo* in the presence of nutrients and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FLt3 ligand, IL-6 and IL-3, and in the presence of about 1.0 mM to about 10 mM at least 0.1 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative; and

a pharmaceutically acceptable carrier.

412. (Currently Amended) A method of expanding a population of CD34+ hematopoietic stem cells *ex-vivo*, the method comprising:

(a) obtaining adult or neonatal umbilical cord whole white blood cells or a whole bone marrow cells sample which comprises unselected CD34+ cells; and

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(b) providing the cells in said sample with *ex-vivo* culture conditions for stem cells *ex-vivo* cell proliferation, said conditions comprising nutrients and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FL13 ligand, IL-6 and IL-3 and, at the same time, culturing said cells in the presence of about 1.0 mM to about 10 mM ~~at least 0.1 mM~~ of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative for a culture period resulting in

thereby expanding a population of ~~a renewable~~ CD34+ hematopoietic stem cells in said sample.

413. Cancelled

414.(Original) The method of claim 401, wherein said stem cells are selected from the group consisting of: embryonic stem cells and adult stem cells.

415.(Cancelled)

416.(Original) The method of any of claim 401, wherein said stem cells are derived from a source selected from the group consisting of: bone marrow, peripheral blood and neonatal umbilical cord blood.

417.(Original) The method of claim 416, wherein said stem cells are mixed with committed cells.

418.(Original) The method of claim 416, wherein said stem cells are enriched for hematopoietic CD34⁺ cells.

419.(Currently amended) The method of claim 418, wherein said expanded hematopoietic cells are characterized by an absence, or significantly diminished expression of cell surface antigens CD3, CD61, CD19, CD33, CD14, CD15 or CD4.

420.(Cancelled)

421. (Cancelled)

422. (Currently amended) The method of claim ~~40121~~, wherein said early acting cytokines further comprise at least one cytokine ~~are selected from the group consisting of: stem cell factor, FLT3 ligand, interleukin-1, interleukin-2, interleukin-3, interleukin-6, interleukin-10, interleukin-12 and; tumor necrosis factor- α and thrombopoietin.~~

423. (Currently amended) The method of claim ~~40120~~, which method further comprises providing ~~wherein said cytokines are late acting cytokines.~~

424. (Original) The method of claim 423, wherein said late acting cytokines are selected from the group consisting of: granulocyte colony stimulating factor, granulocyte/macrophage colony stimulating factor, erythropoietin, FGF, EGF, NGF, VEGF, LIF, Hepatocyte growth factor and macrophage colony stimulating factor.

425-436. Cancelled

437. (Currently amended) The method of claim ~~40136~~, wherein said nicotinamide analog is selected from the group consisting of: benzamide, nicotinethioamide, nicotinic acid and α -amino-3-indolepropionic acid.

438. (Currently amended) The method of claim ~~40136~~, wherein said nicotinamide analog is benzamide.

439-461. Cancelled

462. (Currently Amended) A method of expanding *ex-vivo* a population of CD34+ hematopoietic ~~renewable~~ stem cells, the method comprising:
~~obtaining adult or neonatal umbilical cord whole white blood cells or whole bone marrow cells sample; and~~

culturing adult or neonatal umbilical cord whole white blood cells or whole bone marrow cells sample which comprises unselected CD34+ cells ~~said cells~~ *ex-vivo* under conditions that result in proliferation of said CD34+ cells, said conditions comprising nutrients and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FLt3 ligand, IL-6 and IL-3; and at the same time culturing said cells in the presence of about 1.0 mM to about 10 mM ~~at least 0.1 mM~~ of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative for a culture period resulting in;

~~thereby~~ expanding a *ex-vivo* a population of a hematopoietic CD34+ renewable stem cells in said sample.

463. (Currently amended) A method of expanding *in vivo* a population of CD34+ hematopoietic stem cells, while at the same time, substantially inhibiting differentiation of ~~said~~ the stem cells *in-vivo*, the method comprising: administering to a subject in need thereof a therapeutically effective amount of about 1 mM to about 10 mM ~~at least 0.1 mM~~ of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

464. (New) The method of claim 401, wherein said culturing said cells in the presence of said exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

465. (New) The method of claim 411, wherein said culturing said cells in the presence of said exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

466. (New) The method of claim 412, wherein said culturing said cells in the presence of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

467. (New) The method of claim 462, wherein said culturing said cells in the presence of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

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468. (New) The method of claim 463, wherein said culturing said cells in the presence of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.